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10/080,714	02/25/2002	Alexander Jan Carel De Vries	105531.01	9142

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EXAMINER

NGUYEN, TRINH T

ART UNIT

PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 16

Application Number: 10/080,714  
Filing Date: February 25, 2002  
Appellant(s): DE VRIES ET AL.

\_\_\_\_\_  
James A. Oliff  
For Appellant

MAILED  
SEP 30 2003  
GROUP 3600

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 27, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1, 2, and 4-6 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

5592840	Miyasaka	1-1997
Japanese Pat. 04-321816	Toru	11-1992

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Patent Abstract of Japan Publication Number 04321816 to Mayumi Toru (hereinafter is referred to as Toru) in view of Miyasaka (US 5,592,840).

Toru discloses a method of manufacturing a roller element bearing wherein the method comprising forming recesses on the surfaces of the roller element. Note that the recesses are provided with lubricant. Toru discloses all of the limitations as claimed except for: 1) forming the recesses by shot peening and 2) that an average angle between a wall of each recess on the at least one surface is less than 5 degrees.

Regarding 1), Miyasaka teaches a method of improving abrasion resistance of a metal-product such as a machine part (note that Toru's roller element bearing can be considered as a machine part) by shot-peening. Note that Miyasaka's shot-peening method uses glass beads. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used Miyasaka's shot-peening method to form recesses in the surfaces of Toru's roller element, as suggested by Miyasaka, so as lubricating oil can be retained in the recesses more efficiently (see Abstract in Toru and last 8 lines of Abstract of Miyasaka).

Regarding 2), it would have been obvious, if not already, to one having ordinary skill in the art at the time the invention was made to have set the average angle at a specific value as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art and it would appear that the average angle such as one in Miyasaka would perform equally as well. Furthermore, it is noted that Miyasaka (see lines 60-65 of col. 2) discloses the use of shots having a diameter size of 20 to 200 micrometers (note that this is the same diameter size as of

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Applicants' shots/glass beads (see line 27 of page 2 of the specification)) and the step of forming concave portions/recesses to a depth of either 1.2 micrometer or smaller (see lines 5-10 of col. 9), or 0.6 micrometer or smaller (see lines 8-11 of col. 10), or 3.0 micrometer or smaller (see lines 16-20 of col. 11), or 0.8 micrometer or smaller (see lines 4-7 of col. 13). It is noted that "smaller" can be defined as any depth less than either 1.2 micrometer or 0.6 micrometer or 3.0 micrometer or 0.8 micrometer, which would included "about 0.2 micrometer" and/or "less than 0.5 micrometer" as these are the depths claimed by the Applicants (see lines 25-26 of page 1 of the specification). As explained above, Miyasaka's recesses will have an angle between a wall of each recess on the at least one surface to be less than 5 degrees since Miyasaka teaches the use of shots having the same diameter as claimed by the Applicants and the shots formed concave portions/recesses to a depth of "about 0.2 micrometer" and/or "less than 0.5 micrometer". Therefore, it would appear as though the angles in the Toru device as modified above are clearly less than 5 degree.

Regarding claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have set the diameter at a specific value as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art and it would appear that the diameter such as one in Miyasaka would perform equally as well.

Regarding claim 5, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have set the diameter of the glass bead at a specific value as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art and it would appear that the diameter of the glass bead such as one in Miyasaka would perform equally as well.

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**(11) Response to Argument**

Appellants argue that the reference Miyasaka fails to teach a method of providing recesses by shot-peening such that the recesses have an angle less than 5 degrees. The Examiner respectfully disagrees. It is noted that Miyasaka (see lines 60-65 of col. 2) discloses the use of shots having a diameter size of 20 to 200 micrometers (note that this is the same diameter size as of Applicants' shots/glass beads (see line 27 of page 2 of the specification)) and the step of forming concave portions/recesses to a depth of either 1.2 micrometer or smaller (see lines 5-10 of col. 9), or 0.6 micrometer or smaller (see lines 8-11 of col. 10), or 3.0 micrometer or smaller (see lines 16-20 of col. 11), or 0.8 micrometer or smaller (see lines 4-7 of col. 13). It is noted that "smaller" can be defined as any depth less than either 1.2 micrometer or 0.6 micrometer or 3.0 micrometer or 0.8 micrometer, which would included "about 0.2 micrometer" and/or "less than 0.5 micrometer" as these are the depths claimed by the Applicants (see lines 25-26 of page 1 of the specification). Therefore, Miyasaka's recesses will have an angle between a wall of each recess on the at least one surface to be less than 5 degrees since Miyasaka teaches the use of shots having the same diameter as claimed by the Applicants and the shots formed concave portions/recesses to a depth of "about 0.2 micrometer" and/or "less than 0.5 micrometer".

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

*Ttn*

ttn

September 28, 2003

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